



Works by Gabriela Manole-Adoe and Gheorghe Adoe: The Seal of the Republic; The Monument of Independence in Iași; Ștefan cel Mare; The 1944 Uprising; Sketch for the Monument of Independence; Meditation.

Two artists Gabriela Manole-Adoe (b. 1928) and Gheorghe Adoe (b. 1929) are two distinct personalities who follow separate paths, without influencing each other, although they work in the same studio.

But despite the strong differences of style and outlook, their rigorous attitude towards the exigencies of art, their passion and scrupulousness undoubtedly bring them close to each other.

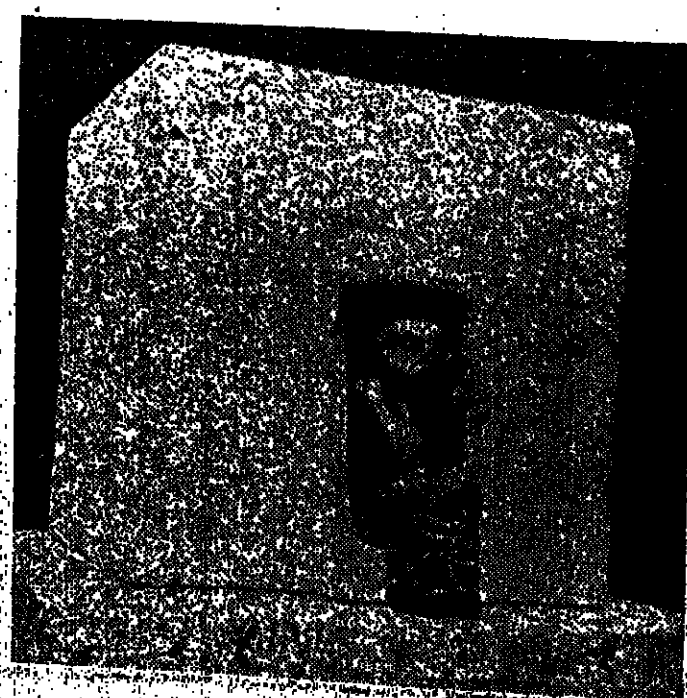
These factors unite them in their quest for creating a perennial art with special and interesting virtues.

Gabriela Manole-Adoe's sculpture breathes a poetical atmosphere in which the skillful modelling with those transitions from quiet and simple planes to agitated and vibrating surfaces, creates a highly expressive unitary whole which we refer to her great monuments or to her small-size sculptures.

Gheorghe Adoe, a graphic artist by training, has also approached sculpture and especially the bas-relief during his career. His bas-reliefs, in which he preserves the style of his graphic works, are altogether remarkable and singular. He commands a rigorous craftsmanship, both in his medallions and in his monumental surfaces.

These two outstanding artists hold a well-deserved foremost place in Romanian fine arts.

ION IRIIMESCU



# ROMANIAN NEWS

INFORMATION AND COMMENTARY WEEKLY PUBLISHED BY THE ROMANIAN NEWS AGENCY AGERPRES

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# ROMANIAN NEWS

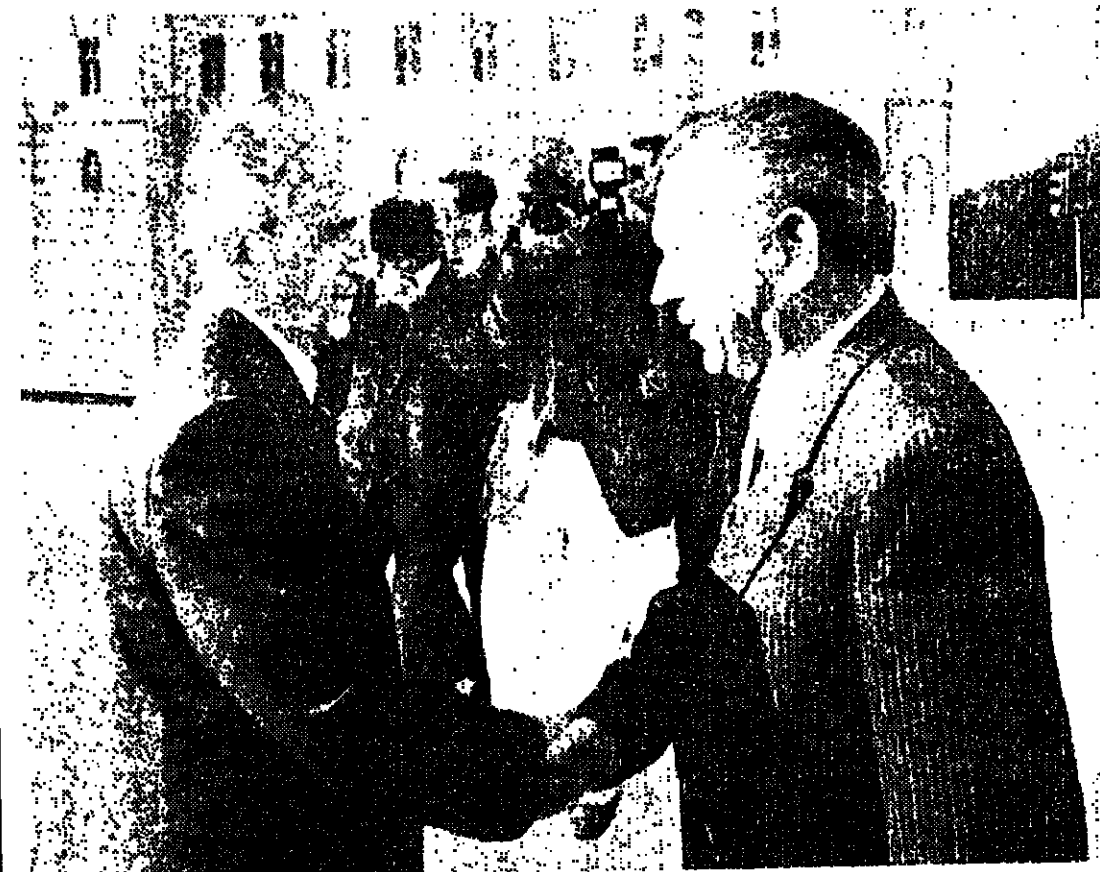
INFORMATION AND COMMENTARY WEEKLY PUBLISHED BY THE ROMANIAN NEWS AGENCY AGERPRES

## WORKING MEETING BETWEEN NICOLAE CEAUȘESCU AND KÁROLY GRÓSZ

On August 28, based on the understandings covenanted, a working meeting was held in Arad between Nicolae Ceaușescu, General Secretary of the Romanian Communist Party, President of Romania and Károly Grósz, General Secretary of the Hungarian Socialist Workers' Party, Chairman of the Council of Ministers of Hungary.

The uninterrupted growth of the friendly and multilateral cooperative relations with all socialist states has been a steady, definitional line of our party and state's foreign policy. The Romanian Communist Party, socialist Romania, by taking steady action for a continuous intensification of their relations with these countries, with the neighbour socialist countries first of all, have been working for the expansion of mutual cooperation as an essential condition for the stronger unity of the socialist states, for the growing might and influence of socialism around the world.

In this framework, the working meeting in Arad between Nicolae Ceaușescu, General Secretary of the Romanian Communist Party, President of the Socialist Republic of Romania, and Károly Grósz, General Secretary of the Hungarian Socialist Workers' Party, Chairman of the Council of Ministers of the Hungarian People's Republic, was an expression of the common wish to approach a number of aspects of the relations between the two countries and parties, and their future development paths.



## NICOLAE CEAUȘESCU'S SPEECH

AT THE WORKING MEETING ON AGRICULTURAL AFFAIRS (Page 3)



## DIALOGUE WITH WORKING PEOPLE IN ARAD COUNTY

On Saturday, August 27, Nicolae Ceaușescu, General Secretary of the Romanian Communist Party, President of the Socialist Republic of Romania, paid a working visit to the county of Arad.

The first unit seen round was the Machine Tool Enterprise, one of the most important, technical units in the field. The Enterprise, now in its 20th year, has seen the most productive stage in its activity in the past few decades, when its production has increased tenfold. Over the same interval, the technical standard and the quality of the products made in Arad improved, with the share of products manufactured according to world standards rising up from 10 per cent in 1960 to 80 per cent in 1980.

Now, the Enterprise has modernized its equipment and technical standards, which have been technical standards. Now, among them are the line for the production of parts to equip the machine tools.

(cont. on p. 3)



# WORKING MEETING BETWEEN NICOLAE CEAUSESCU AND KÁRÓLY GRÓSZ

(cont. from p. 1)

vergency and independence, non-interference in domestic affairs and mutual advantage. On that line, the top-level dialogue in Arad, conducted in an open, comradely spirit, was an opportunity to discuss a spectrum of problems concerning the present relations between the two countries, parties and peoples, and their future development paths, starting from the common interests in strengthening friendship and collaboration, with a view to ensuring the economic and social progress, a proper course of socialist construction in general. Once again it was stressed that good neighbourly relations between Romania and Hungary were necessary to the two peoples, as in all the peace of the world, for the implementation of their economic and social development programmes, while serving the general interests of collaboration and cooperation in Europe, of building a united Europe in consideration of the diversity of social systems, the demands for the observance of each people's right to make the life it wishes, free from outside interference. Showing that the meeting and talks proved useful and necessary and that their results were good, Nicolae Ceausescu stated:

"I can say that we jointly came to the conclusion that we should work for the growth of economic and technical-scientific collaboration in various forms, of scientific and cultural activities, and of general exchanges, including in tourism, on the basis of what we agreed upon and think that can be achieved under the current circumstances, that we should intensify the exchanges of opinions and experience for a better understanding of the problems in one country or another, so as to find the ways for ever broader collaboration in all domains."

In his turn, Károly Grósz, highlighting that the negotiations and talks had been held in a good, useful atmosphere, said: "I too would like to stress that our talks were marked by the responsibility we have before our peoples for the assertion of our policy towards the socialist world and toward mankind in general. And I am of the same opinion as comrade Nicolae Ceausescu that it is our peoples that should judge and assess our policy. It was rightly stressed, as the communiqué carried by the press also shows, that the growing economic and technical-scientific potential of the two countries provides a favourable

background for an even stronger expansion of economic exchanges, for the deepening of cooperation in production and production specialization. An important role is to be played by the relations on a cultural, scientific and tourist line, by the exchange of experience in various fields. In this context, a significant contribution can be made by mass media, which are called upon objectively to tell the truth, the facts, to help a better knowledge and mutual understanding, and serve the strengthening of friendship and cooperation."

As Nicolae Ceausescu said in his statement, there are problems on which opinions still vary. However, it is the view of our party that they should be neither dramatized nor exaggerated, but clarified through efforts with a view to bringing the positions and points of view closer to one another. In this respect, our party has constantly set out from the fundamental thesis, which life has confirmed, that socialism is being built in conditions which differ from one country to another and that it is the right as well as the duty of each party, of each people, independently and sovereignly to choose the paths of building the new system. As the RCP General Secretary un-

derlined at the press conference, no one can claim to hold the truth on one question or another, and the solutions to economic, social, cultural or any other problems of socialist construction are the exclusive concern of the respective party, of its leadership. It should be emphasized that full agreement on this stand of principle was reached during the talks. Experience amply proves that the time of the harmful practices of attaching labels, of imposing a certain "model" of which the construction has gone, that such practices cannot and must not be resorted to again. Our party and state leader suggestively recalled the great truth that the only judge of the correctness of a party's policy is the people of that country.

The working meeting was also an opportunity to exchange views on aspects of the international life and to underscore the common stands on peace, disarmament and other issues of today's world, which had otherwise been reiterated at a recent meeting of the Warsaw Treaty member states' Political Consultative Committee. The Arad working meeting between Nicolae Ceausescu and Károly Grósz, by its progress, its conclusions and understandings, can be assessed as a landmark for the future relations of

our parties and peoples, as the RCP General Secretary stressed in the talks having proved and agreed upon opening new prospects to Romanian-Hungarian cooperation. Such a step is fully in line with the objective law of socialist development, and meets the interests and aspirations of our people. Certainly, solutions to all the problems cannot be found in just one meeting, nor can we meeting bring all the necessary clarifications, hence the highly significant necessity — which both sides underlined in their meetings on various levels and in various fields in order that questions of common interest be discussed and effective solutions be worked out. In this spirit, Nicolae Ceausescu expressed our wish and hope that the Romanian-Hungarian top-level meeting in Arad may mark an important moment in the further relationships between the two parties and peoples. The Romanian Communist Party, and Romania are willing — and this fact was reiterated during the meeting — to do all in our power for the development of Romanian-Hungarian friendly and cooperative relations, for the good of the two peoples, and of the general cause of socialism and peace.

## WORKING MEETING ON AGRICULTURAL AFFAIRS

The RCP General Secretary, Romania's President Nicolae Ceausescu attended on Thursday, September 1, a meeting with the party active and basic cadres in agriculture held over August 30 — September 1.

The meeting debated a report read by the Minister of Agriculture, Gheorghe David, on the yields of wheat, barley and the other crops harvested in the summer of 1988, the state in the delivery of products to the state centralized stock, conclusions and measures to be taken to carry out the plan with cereals in 1989, the fulfilment of plan indicators in animal-breeding and the actions to be taken to achieve the planned livestock and animal output as well as a programme of measures regarding the autumn agricultural campaign.

Questions were also approached related to the appraisal, harvesting and sowing of the autumn crops, to the structure of the programme of sowing natural pastures, including the pastureable woods. Numerous participants took the floor in plenum and by groups. President Nicolae Ceausescu made a speech at the end of the meeting.

In his extensive speech delivered on Thursday, September 1, at the end of a Working Meeting on Agricultural Affairs, President Nicolae Ceausescu showed that the meeting had discussed major questions related to production and set the necessary measures to fulfil the plan and programmes for 1989, to perform operations in preparation for the next year's harvest. The meeting, the speaker said, turned into a broad democratic framework, which occasioned exhaustive critical and self-critical debates on all the programmes and plans for the development of Romanian agriculture.

Showing the summer cereal production to be better than in 1987, Nicolae Ceausescu stated that in 38 counties there were units with crops larger than 5,000 kg of wheat and barley per hectare. Showing that summer crops larger than last year's were harvested in all counties, the speaker said they are, however, below possibilities.

Referring to the tasks incumbent on agricultural units in the autumn campaign, the president insisted on the need to work most responsibly to assess, harvest and store the farm output as a whole, which will allow the active economic role of 355 states on all continents, with the CMEA countries in the first place, with all the states of the world, irrespective of their social system.

An important place within the aggregate of our foreign economic relations is held by the relations between our country and the Soviet Union — the firmest, most principled and fully equal rights, respect for national independence and sovereignty, non-interference in internal affairs and reciprocal advantages of solidarity and comradely mutual assistance.

Significant for the development of the relations between our countries is the fact that the Soviet Union ranks first in Romania's foreign economic links as a whole. The talks held and undertaken by the RCP General Secretary, President Nicolae Ceausescu and the CC of the CPSU Mikhail Gorbachev, played and continue to play a role of highest importance in the development of cooperation in production specialization and the cooperation in the production between our countries.

The long-term programme for the development of economic and technical-scientific collaboration between Romania and the USSR, under the leadership of the RCP General Secretary, played and continues to play a role of highest importance in the development of cooperation in production specialization and the cooperation in the production between our countries.

On the same day, in the afternoon, President Nicolae Ceausescu visited the commune of Poien, inspecting the terrain of the local producer cooperative farm. He talked to the representatives of local and state bodies about the problems related to the plant and animal production achieved by the farm during the year. The dialogue focused on questions linked to the production

and updating of rural localities in the county of Arad, and of the commune village in particular. President Nicolae Ceausescu said that, as part of the actions to modernize these localities, the most important rural settlements, to ensure the stability of their population, to develop industrial-type activities and services, to continuously raise the quality of life in these future agroindustrial towns, in connection with the fulfilment of the provisions of the project for the commune of Poien, he requested that its economic base should be further developed.

Referring to the plan for the development and modernization of Pecica commune, which had been shown to him, the President stressed that the process of raising the level of an agroindustrial town would have to unfold steadily, step by step, gradually, by blending the old with the new and by ensuring the facilities needed to improve people's lives.

This locality, the RCP General Secretary said, cannot be turned into an agroindustrial town in two years, nor in five years. We must set off by strengthening the economic base of the commune, by increasing farm production and of social services, while building a development and the necessary facilities until 1995. By the year 1995, Pecica will be able to turn into an agroindustrial town, and by the year 2000, it will be a fully developed town.

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Next, President Nicolae Ceausescu approached questions related to the development of animal-breeding laying stress on the measures required to implement the programmes for the growth of this sector. The speaker insisted on the need to increase the organization of all activities in agriculture so as to ensure bigger farm outputs and the growth of other activities, higher incomes of cooperative farmers, of all the people working in agriculture, of the entire peasantry.

In his speech, President Ceausescu requested that special attention be paid to improving research, enhancing the role of research units throughout the country. We must ensure the sciences become the decisive factor of progress in agriculture, of the new agrarian revolution. Nicolae Ceausescu said stressing the demand for a systematic improvement of professional, scientific, technical knowledge of experts, workers and cooperative farmers, of all the people working in agriculture, of the entire peasantry.

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## ROMANIA IN THE WORLD • ROMANIA IN THE WORLD

### ROMANIA '88

### OPENING OF THE ROMANIAN ECONOMIC EXHIBITION IN MOSCOW

An exhibition of achievements of Romania's national economy was officially opened in Moscow on August 29. The exhibition on the theme "Romania '88" illustrates the growth of Romania's foreign economic relations within which an important place is held by the economic cooperation and collaboration with the USSR. The exhibition is meant to give new impetus to Romanian-Soviet economic cooperation.

The exhibition, synthetically presents the success of the Romanian industry, which developed strongly more particularly after the Ninth RCP Congress (1985), manufacturing a wide range of products on a par with the world's most advanced technology. It illustrates the powerful development witnessed by machine building, including such branches as sub-branches as lathes, road, water and air transport means manufacturing, mining and power engineering, the production of complex industrial equipment, farm machinery etc.

Arresting attention are products of Romania's industry: large-capacity high-yield drilling rigs, technological equipment for the chemical and petrochemical industries, machines used in construction, a wide range of Romanian motor vehicles — trucks, buses, minibuses, utility vans, "Daewoo", "Oltia" and "ARO" cars. Also on display is complex equipment — machinery, controlled valves of various sizes, flexible cells for robot-assisted turning, plant and equipment for the power extraction, chemical, metal processing and food industries etc.

Other stands show the achievements of the Romanian chemical and petrochemical industries: displaying new models of complex chemical works, and plants exported to countries on all continents, the USSR included. As a broad spectrum

of chemicals ranging from fertilizers, tyres, plastics, synthetic fibre and yarn to varnishes and dyes, pharmaceuticals and cosmetics etc.

Taking the floor during the opening ceremony, N.V. Talyzin, candidate member of the Political Bureau of the CC of the CPSU, First Vice-Chairman of the Council of Ministers of the USSR, welcomed that significant event in Soviet-Romanian collaboration. Mentioning that the exhibition has opened shortly after the celebration of the day of Romania's liberation from the fascist yoke — the 45th anniversary of the antifascist and anti-imperialist revolution of social and national liberation — the speaker pointed out that socialism had long asserted itself on Romanian soil, representing the cornerstone and the backbone of the Romanian people's social outlook and consciousness.

Of the numerous bright aspects that characterize socialist Romania's image of today, he said, the exhibition outlines the real results and successes scored by the Romanian working people in the years of building the new-type society, prove the growing potential of the Romanian economy and highlight its great availability. Soviet people follow with keen interest the brotherly Romanian people's life, the progress of socialist construction in Romania.

Soviet-Romanian collaboration, he further pointed out, is manifold. It means political, economic, cultural and other relations. The firm determination further to advance on the road of strengthening friendship and cooperation, the results of the May 1987 meeting between the leaders of the two fraternal parties — Mr. Gorbachev and Nicolae Ceausescu — was characterized by a mutual

aspiration to lend it a stable, continuously developing character, meeting the fundamental interests and the requirements of the two countries' economies, the speaker said. For many years now, the Soviet Union has been Romania's main trading partner. Our bilateral economic relations follow an ascending course. Further broad possibilities of collaboration open as a result of the development of the process of many-sided restructuring under way in our country, as part of the implementation of the resolutions of the 19th Conference of the Party, which also means broad cooperation in production specialization and the cooperation in the production between our countries.

Offering an example of direct cooperation in the building of mining works in the USSR, at Krivoy Rog, and to the capitalization of the natural gas deposits of the Turkmen Soviet Socialist Republic, as well as the collaboration on the building of a trans-gas pipe on Romania's territory.

The decisions reached by the 44th meeting of the CMEA session also create favourable conditions for the expansion of economic cooperation between our two countries. Developing bilateral relations, our countries attach great importance to the cause of strengthening the unity and cohesion of socialist countries, the consolidation of the socialist system in the world. These plans are indissolubly linked to the ideals of socialism, which are directed towards the setting up of peace and international system of international security.

The exhibition, the speaker said, is a landmark in the development of the relations between our countries, a milestone in the history of the Romanian people's social outlook and consciousness.

of disarmament and broad international collaboration. These goals are answered by the new initiatives of the countries participating in the Warsaw Treaty, recently formulated at the meeting of the Political Consultative Committee held in Warsaw.

We believe that the exhibition, acquainting the Soviet people with the Romanian people's successes in the years of socialist construction and highlighting the level attained by Romania's economy at present, will serve the further development and expansion of Romanian-Soviet economic, technical and scientific collaboration, the speaker said in conclusion.

In his address, Stetan Andrei, alternate member of the Executive Political Committee of the CC of the RCP, First Deputy Prime Minister of Romania, showed: "The national exhibition 'Romania '88' is a truly firm set on the principle of fully equal rights, respect for national independence and sovereignty, non-interference in internal affairs and reciprocal advantages of solidarity and comradely mutual assistance."

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AN IMPORTANT FACTOR OF ECONOMIC PROGRESS  
FOREIGN ECONOMIC RELATIONS

# TRADE, COOPERATION, DEVELOPMENT

CONSTANT EXPANSION OF INTERNATIONAL ECONOMIC EXCHANGES • SIGNIFICANT QUALITATIVE CHANGES IN THE STRUCTURE OF FOREIGN TRADE • COOPERATION IN ECONOMY AND PRODUCTION, A SUPERIOR FORM OF COLLABORATION • A MERCHANT FLEET COMMENSURATE WITH FOREIGN ECONOMIC ACTIVITIES • FURTHER ACCENTED DYNAMICS OF THE EVOLUTION OF FOREIGN ECONOMIC EXCHANGES

The activity of foreign trade and cooperation in economy and production has widely expanded, resulting in Romania's ever steadier and more efficient participation in the international economic life.

Nowadays Romania has economic ties with 148 countries on all continents, compared to 98 states in 1965. Taking into account the truth that in the present extremely complex international circumstances the economic collaboration between the world's countries represents a development strategy, a necessity imposed by the international division of labour, by the ever more interdependences among the national economies and by the interests of détente and rapprochement among peoples, Romania is promoting an equitable trade, based on mutual interests and benefits, free from any protectionist barriers.

Apart from broadening the geographic

areas where her commercial partners, markets and supplies are to be found, Romania has continually developed the volume of her economic exchanges. In 1987, the volume of Romanian foreign trade was some eight times larger compared to 1965, and the annual value of per capita exports was more than nine times larger, exceeding imports by far.

## DOSSIER

## MULTIPLE FORMS OF ECONOMIC EXCHANGES

The role of foreign trade and economic cooperation as a factor of enhancing domestic development possibilities is highlighted by the increasing dynamics of this activity in the mentioned interval (1965-1987), compared to that of industrial production (which grew some seven times) and of the national income (which rose about five times). An illustrative indicator of the ever more significant role of foreign trade and of the extent of the Romanian economy's participation in the world exchanges of material assets is the evolution of the export's share of the national income, an indicator which doubled between 1965-1987 to reach

almost one fourth of it. Several branches of machine building, chemistry and petrochemistry, the light industry and the wood-working industry export at present more than half of their whole output.

The effort to develop stable, long-term ties with partners abroad, capable of meeting the complex situations created by contemporary progress also comprises the amplification of economic and technico-scientific cooperation as an advanced form of international economic relations. At present, almost one third of the total volume of Romania's economic exchanges with foreign countries unfolds as part of various cooperation

forms: from providing designs and technical documentation, licenses, know-how, technical assistance, other engineering services, founding joint production ventures based abroad as well as in Romania, to delivering equipment, machinery and plant and building various projects and units in the most diverse branches (machine building, electronics and electrical engineering, chemistry and petrochemistry, metallurgy, power, mining and other economic sectors). In this way one has also secured considerable amounts of raw and subsidiary materials (about one fifth of the national economy's current needs).

Export structure has significantly been improved in recent years. While in the 1950s, raw materials and farm produce accounted for 75-80 per cent of Romania's foreign sales, in 1987 highly processed products (of the machine building, chemical and consumer goods industries) accounted for over one third (38 per cent), and at present their share is 63 per cent. At the same time, the Romanian in-

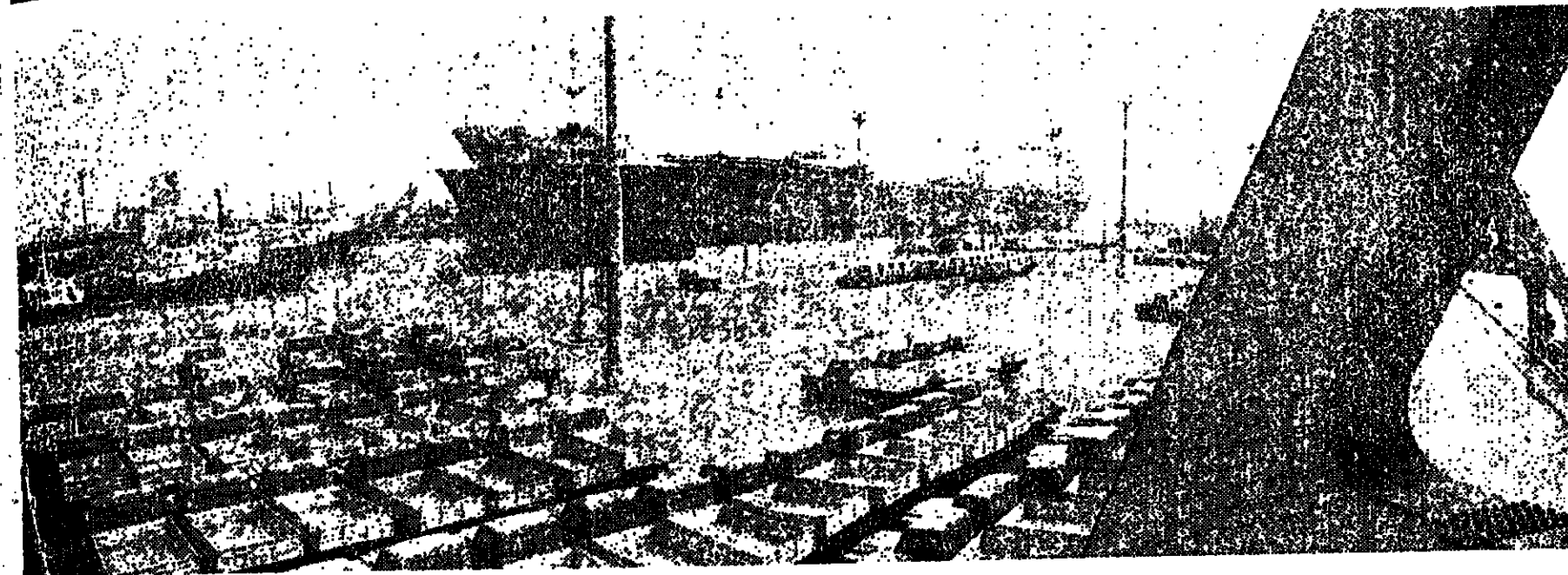
## INDUSTRIAL JEWELS

Romania's railway bearing industry makes at present, more than 4,500 types of bearings with diameters ranging from 1-1 mm to 2,100 mm (compared to 23 types in 1940). In this interval, the existing units were developed and modernized. But, the real development of the respective sub-branch took place over the 1970-1980 decade when, in cooperation with famous firms in the field, four new works were built: the Alexandria enterprise (with the Japanese firm Koyo Seiko), the heavy bearings enterprise of Ploesti (with the US Railway Bearing Co firm) and the factories of integrated bearings at Braila and Bragov (with the firm Koyo Seiko). Prestigious firms of West Germany, the USA, France, Italy, Japan, Sweden, Switzerland and Austria contributed, at the same time, to development and diversification of the Romanian bearing industry.

The railway bearing industry continuously developed and modernized covers at present almost all the needs of the national economy. At the same time, more than 60 percent of the output bearing production is exported to over 70 countries, among which the USA, the USSR, Great Britain, People's China, Japan, Czechoslovakia, France, Brazil, the GDR, Argentina, Hungary, Austria, Poland, Belgium, Bulgaria, Sweden, Yugoslavia, the Philippines, Pakistan, Turkey, the United Arab Emirates

industry's capacity has increased for exporting to third countries big and strong economic units, accompanied by specific modern, highly efficient technology, competent technical assistance in erecting, putting in operation and exploiting the respective units, in the homegrown personnel's evolution and the growing competitiveness of the branches of the Romanian industry, whose productivity and output grew at an average annual rate of 16 per cent in the 1965-1987 period.

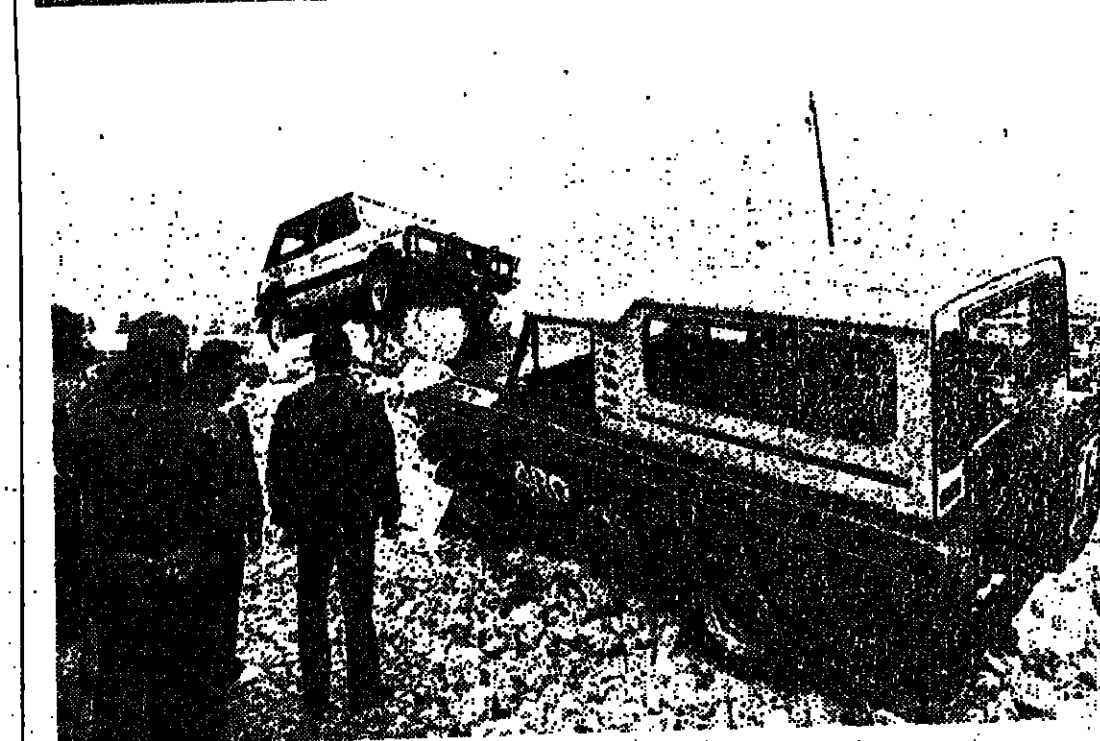
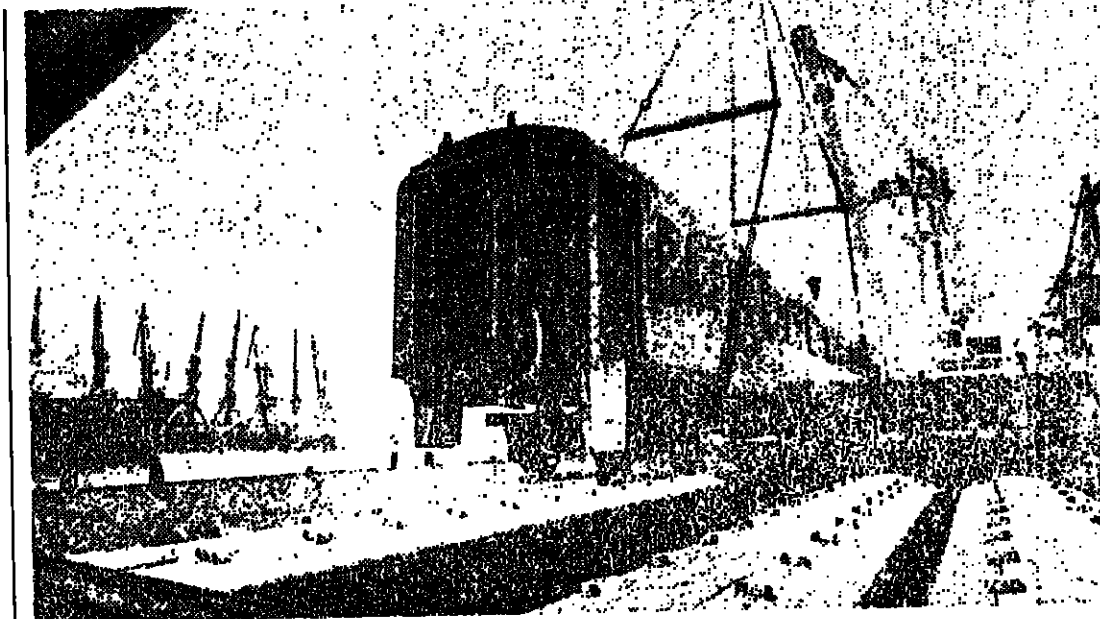
The volume of Romania's economic exchanges with foreign countries has increased constantly. In the last two decades, to accept how far over the lifting of Romanian foreign trade, of which CMEA countries account for more than half. The forms of cooperation between enterprises in Romania and those in other countries have been developed and diversified.



## A WIDE OPENING

Romania will further pay special attention to developing and deepening her relations with these countries, considering that a passage is possible now to a new, higher stage, characterized by the establishment of lasting, long-term production relations, the joint building of complex economic projects, the deepening of specialization and cooperation, Romania boasts adequate productive possibilities and

is working towards the acceleration of technico-scientific collaboration with a view to manufacturing high-tech equipment and plants meant to ensure the rapid growth of labour productivity and economic efficiency, the mechanization and automation of production processes and the reduction of consumptions, the turning out of internationally competitive products. Romania attaches special



## TRUCKS IN 70 COUNTRIES

The Bragov Truck Enterprise is currently one of the most modern and strongest manufacturing units in Romania. It made its debut in the mid-1960s, when the first Romanian-designed trucks rolled off its assembly lines. The experience gained during this interval, the enterprise's modern equipment and the acquisition of a valuable research and design potential enabled the Bragov manufacturing unit to create the fourth generation of Romanian trucks. The year 1984 marked the assembly of the first three types of vehicles belonging to this generation, known in many countries under the name of DAC.

In the whole, the Bragov works manufactured over 100,000 trucks of various capacities and uses. More than a third of the total truck production was exported to over 70 countries on all continents. To People's China alone, for example, 25,000 trucks and three assembly lines have been delivered. "Universal Tractor" Foreign Trade Enterprise (located in Bragov) delivers ROMAN and DAC trucks, chassis and tractors abroad.

importance to multilateral collaboration within CMEA, whose founding member she is, being a party to some 200 agreements, conventions and other long-term multilateral understandings among that body's member countries.

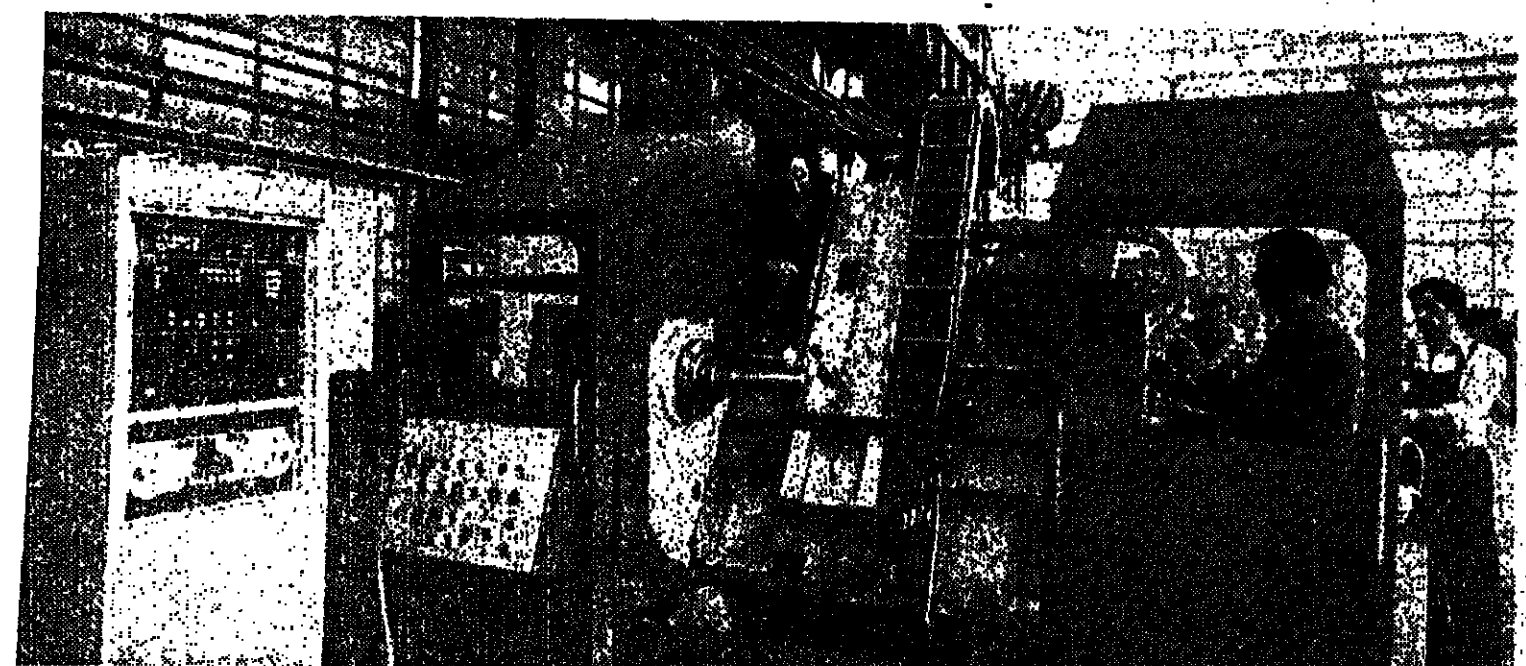
Romania has developed and diversified material goods exchange with developing countries, the amplification of relations with these countries answering both the development needs of the Romanian foreign trade and the interests of private states in the consolidation of their own economies and political independence. Romania promotes commercial and economic cooperation with some 100 developing countries in Asia, Africa, and Latin America, whose share in the Romanian foreign trade has grown, in the last two decades, three times, a growth that is above the amplification rate of these ties. The growth of these economic trade relations, other-world states' cooperation, under the most varied forms, has an important role in Romania's economic relations with

In Alexandria, the second largest bearing manufacturing unit in Romania, produces true gems (top photo, p. 4), while Arad (bottom photo) boasts the biggest trucking tool enterprise. Intense traffic of Romanian goods due to be exported, in the port of Constanta: trucks (p. 5, top photo); other Romanian products — railway cars (middle) and tractors (left) are being loaded on ships before being delivered to the end user, the ARO cars (above) are put to rigorous tests.

these countries. Attention should be made that most of the over 120 projects built in the last years by Romanian specialists abroad function in these countries.

The development of Romania's economic relations with developed capitalist states is part of her foreign policy of promoting equitable, mutually advantageous relations without restrictions and discriminatory practices, able to slow down the pace, normal development of these ties. The growth of these economic trade relations, other-world states' cooperation, under the most varied forms, has an important role in Romania's economic relations with

the conclusion of long-term commercial and industrial and technico-scientific cooperation agreements, on the mutual application of the most favoured nation's clauses, on Romania's inclusion among the end users of the generalized system of custom preferences and the creation of joint economic ventures at government level. Romania's economic exchanges with these partners include the most varied ways — from direct flows of material goods to the multilateral cooperation in industry as well as in scientific production and trade joint ventures located in these countries or in Romania.





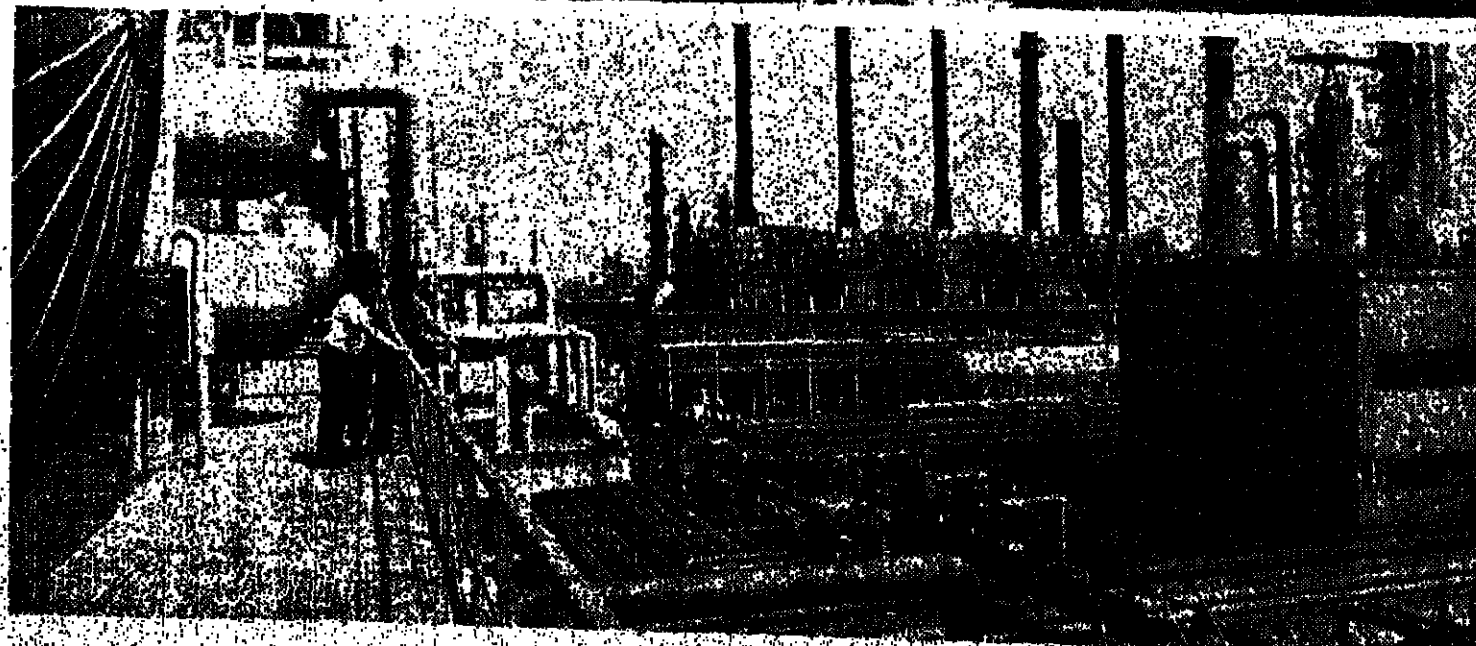
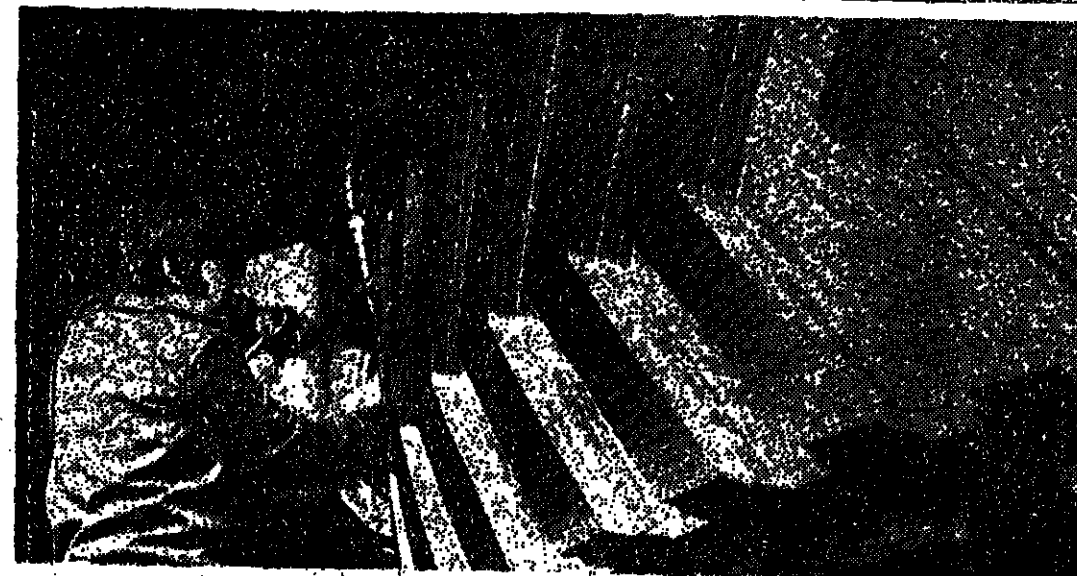


## ON THE WORLD'S SEAS AND OCEANS

Romania places at the basis of her relations with all states, the principles of strictly respecting national independence and sovereignty, full equality of rights, non-interference in domestic affairs and mutual advantage.

The simplification and extension of economic relations with all world states, regardless of their socioeconomic order, cooperation in production and in science, the development of more native participation in the world exchange of material assets represents for Romania a first rank option, a decisive factor in the development of a programme of continuous development and progress. The wish to strengthen the foreign trade activity of the country in a series of concrete objectives whose result was to increase her participation in world trade. In this respect, the continuous development of the maritime fleet for the whole national economy, especially of basic progressive branches, the sensible development of the shipbuilding industry, the annual ones (in the last five years) the capacity of the merchant fleet has grown 27 (times) hold pride of place. Romania has created, developed and modernized a powerful shipbuilding industry at the Constanta, Mangalia, Giurgiu, Tulcea, Drobeta-Turnu Severin, and shipyards where tens of ships of various types and uses (cargo ships, ore carriers, oil tankers, fishing vessels, with capacities varying between 7,000 and

165,000 (tw) are built annually. Starting this year, Romania will build the first ferryboats. From an almost inexistent merchant fleet in the 1930s, the Romanian merchant fleet will register hundreds of ships with a displacement of over 7.3 million tons by the end of the next five year plan period, Romania being one of the main world countries with a well developed merchant fleet. Since 1984 Romania has an important shipping company, the navy, the biggest one in the world, and the largest country in the Danube-Black Sea Canal. This shipping way



# THE DYNAMISM OF CHEMISTRY

With an average annual development rate of 10.3 percent, Romania's chemical industry has been, in the last two decades and a half among the most dynamic branches of the national economy. In the 1955-1967 period alone, more than 1,520 chemical and petrochemical production units were commissioned, being located in practically all 40 counties. Finest raw materials included. New production facilities for manufacturing chemical fibres and yarn, catalyzers and synthetic resins, dyes and pigments, photosensitive substances, high purity reagents and fine synthetic chemical products were created.

The powerful development of this branch allowed the growth of its share in the overall industrial production, which is at present 10.5

Chemical and petrochemical products hold over 17 percent of the country's total export volume, being solicited by 1,200 firms of 100 countries on all continents, among which Great Britain, Argentina, Austria, Belgium, Brazil, Canada, Congo, Denmark, Switzerland, Egypt, France, the German Democratic Republic, West Germany, Greece, Italy, Japan, Norway, the Netherlands, Poland, USA, Syria, Turkey, Hungary and the USSR.

At the same time, Romania has built in cooperation, a series of chemical and petrochemical units in various countries like: Afghanistan, Egypt, Syria, India, Jordan, DPR of Korea, Iran, Turkey, etc.

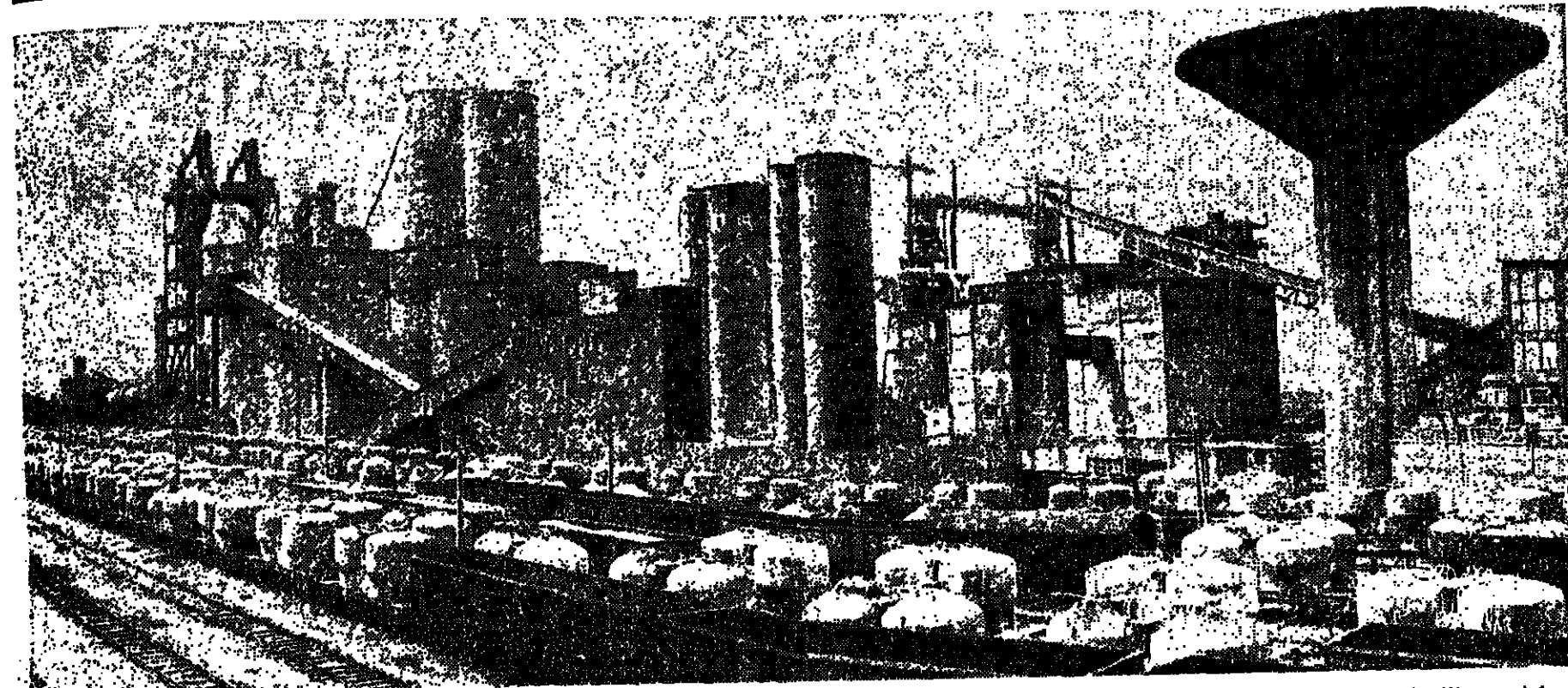


Romanian sculptured furniture is in ever greater demand abroad (top photo); the Reşia Mechanical Enterprise (below) is famous for the ship engines it manufactures; exterior view of one of the biggest Romanian petrochemical works — that of Piteşti (bottom).

which shortens the distance by connecting the Danube river with the Black Sea by 400 km is not less important than the world's big canals: Panama, Suez, St. Lawrence, St. Lawrence-North German Canal, Alsace, etc. of this canals' branches was commissioned last year by the German-Austrian-Norwegian Canal. Further, these two canals ensure an annual passage of over 90 million tons of traffic of over 90 million tons. The two shipping ways, the new St. Lawrence-Norwegian Canal, capacity of some 50 million tons of various goods, and the new Constanța-Sud port, which is in an advanced construction stage, will increase the traffic bigger than the present Romanian sea gate, becoming one of the largest ports in Europe. The works (with a total cost of 100 million tons of goods) at the Danube ports, will allow the whole volume of Romania's commercial exchange to be handled and sufficient "free ports" will also contribute to carrying this objective as they will tend to diversify the country's access to the sea through her own ports to free zones.

All these means, as well as the continuous modernization of export structures, the production of new products, will allow Romania to increase the efficiency of her foreign trade activity, increasing the efficiency of her activity. For 1980, the country's foreign trade activity is planned to increase by 10-15% in value, compared with 1979. Romania's foreign trade activity is planned to increase by 10-15% in value, compared with 1979. Romania's foreign trade activity is planned to increase by 10-15% in value, compared with 1979.

THE UNIVERSITY OF CHICAGO



# 30 TIMES MORE

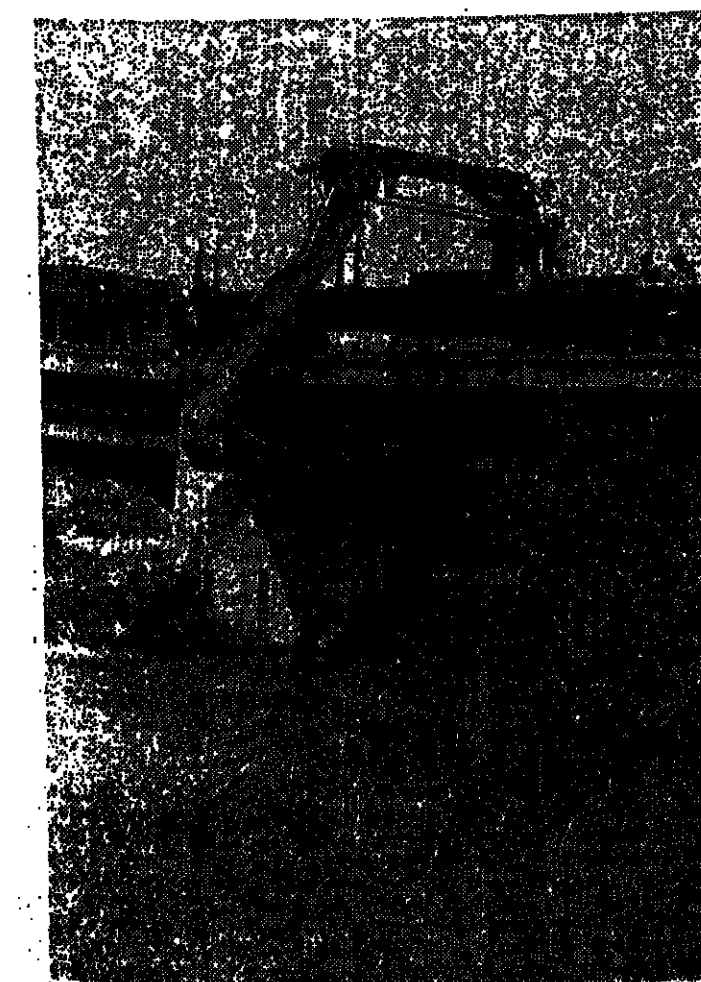
The Binders and Asbestos Cement Works of Fieni, Dimbovitza county has ensured most of the basic material needed by building allies for over six decades. Work is similar to those of miners, carried out day and night, with the difference that it is not done in the underground. The big plant uses most of the male labour of the town and neighbouring localities.

The first charges of concrete were transported 35 years ago, the raw material being found in the surrounding mountains. The country's big construction sites and then the ever growing demands of foreign partners imposed the growth of the cement industry, the production increasing 30 times. When the mounting of the biggest clock in the world was started, with a daily capacity of 1,100 tons, the specialists established that the only solution of ensuring the necessary raw material for furnaces would have been the mounting of 10 km long conveyor belt with a daily haulage of 1,100 tons per hour. In point of fact, the relief of the region was achieved by the belt held the first place in Europe and the third in the world.

Europe and the third in the world. The last railway cars were loaded with PC-500 cement for Turkish end users, who are building the second bridge over the Bosphorus. A cement with special properties, able to resist, for centuries to wind and water abrasion, other types of special cements have been developed and exported. Other types of special cements have been developed and exported in Spain, Turkey, Norway, etc. particularly the superior DS type cement was added with qualities according to its uses. Worth mentioning is also the fact that the FIAT workers are the main suppliers of the big scale construction projects now under construction in Romania. In the Dnieper delta, the dam project along the Danube, the development works on the Dimbovitza river, the residential units in the Carlsburg.

One of the preoccupations of the plant's management is to ensure the best working and living conditions to the workers, to reduce to the maximum the noxious pollution effects, a characteristic phenomenon in units producing building materials. The plant succeeded in remaining within the strict pollution limits admitted by law.

**COSTEL SIMION**



The Binders and Asbestos Cement Works at Pical (top); aircraft  
low trucks (right); equipment for the control and workmanship  
of railway bridges (bottom).

# AIRCRAFT TOW TRUCK

The passengers of the airplanes taking off or landing at Otopeni International Airport have noticed the appearance on its runways of an uncommonly coloured and shaped motor vehicle. On first sight it seems to be a truck for technological or goods transport. But in actual fact it serves to tow the aircraft to the hangars, or to manoeuvre them on the parking platforms on the airport precincts.

The design and manufacture of this low truck, which was made by a collective of the Bucharest Institute of Transport

Research and Technological Design in collaboration with the Milica Mechanical Enterprise, was a necessity — engineer Constantin Georgescu, head of that collective, told us. Parallel to the development of the Romanian aircraft industry, the diversification of Romania's airborne trade with many countries in the world, the number of aircraft serving the international airports in Romania has also grown.

That was one of the technical and economic reasons for experimenting with a Romanian-made aircraft tow truck. The

truck, which is equipped with a 180 HP engine and develops a tractive force of 12,000 kg measured at the low hook, can draw airplanes weighing up to 220 tons. It has an automatic mechanical-hydraulic transmission, a device that electronically selects the turning mode and — an equally important thing — four possibilities of independent wheel operation. The cabin is provided with a heating system, and soundproofed for transmitters.

AL. CONSTANT

# RAILROAD EQUIPMENT

We are not talking about a new idea. But the achievement is. The design, conception, construction and the equipment is a technical first in Romania. According to the existing data, only a few countries in the world manufacture such a complex installation.

[illegible]

equipment a standard car, hydraulic drive, hydraulic articulations, standard axles. Specialists from the Institute for the Study of the Problems of the Mechanization of the Construction of the USSR and the Ministry of Works, collaborated in achieving this design. The assembly and adjustment of the machine is simple. The machine is a metal model being carried out by the Mechanical and Heat Treatment Department of the Institute.

The new installation (our photo) is used for the assembly and inspection of rifled barrels, producing numerous defects which cannot be detected by the old technology. It has a system of three articulated arms, actuated by two revolving mechanisms. These mechanisms rotate the barrel in the direction of the barrel axis, rapidly on the line of this axis. They can be hydraulically or electrically controlled. At the end of the barrel there are two control devices. The first device is a contact device and a deflection device. The second device is a contact device and a deflection device. The deflection device is used to deflect the barrel from the axis and from the line of the barrel. The use of the new technology will increase the productivity of the work, with the reliability and quality, in comparison with the old technology. The equipment can be used to work on the barrel in the direction of the barrel axis.

# THE GUNFANTASY





## INFORMATICS ON A BUS

The current production of computer technology has come to a standstill: the offer of services put out by the units supplied with equipment for practical training in the field of informatics is exceeded by the demands of education establishments and other institutes. Under the consequences somebody suggested that mobile laboratories, especially equipped with computer technology and highly trained staff should be directly supplied to the beneficiary for a limited duration of time. In collaboration with the Atomic enterprise of Bucharest and the Factory of Electronic Computers, ICST-TCI (the Institute of Scientific Research and Technological Engineering for computer technology and informatics) has designed and built the first mobile laboratory of scientific training for computer technology and informatics.

mobile laboratory is equipped with ICSS personal computers manufactured by the enterprise of electronic computers of Bucharest which can function independently but also connected to a local specialized network. The basic equipment of the laboratory can be completed with an installation of closed-circuit television, thus combining didactic methods specific to computers with those offered by classical audio-visual means. With minimal changes this

ordinary means of transport helps broaden the usage of computer technology: practical training, demonstrations, computer-aided teaching of subjects, contests, etc. The computer-aided mobile laboratory for computer technology and informatics, where 30 people can work effectively, can also be easily restructured in order to transport 25 travellers in conditions of normal comfort.

M. MILENA



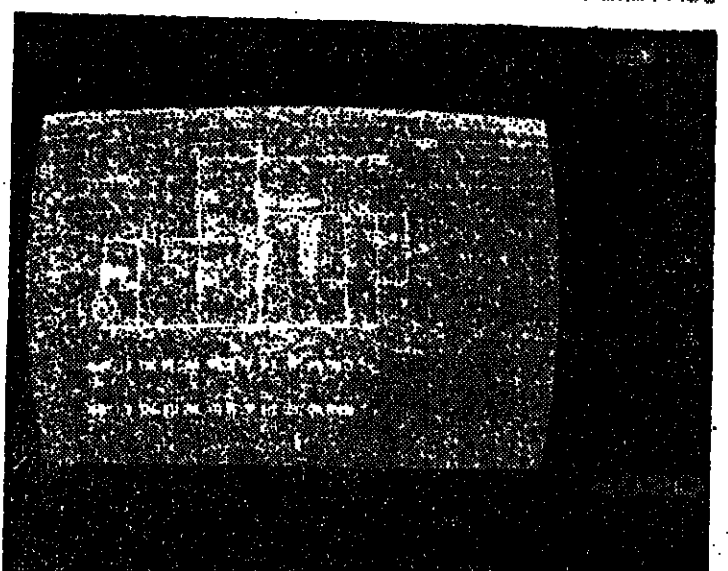
## SCIENCE and LIFE

### A NEW TECHNOLOGY

Test-tube babies. One would hardly believe it possible. Now, plants too stop being dependent on the soil. They can grow anywhere: on sand, on glass, on a new technology of growing houseplants and flowers. In Romania, this technology is applied to tomatoes. Since 1983, at the Ecoprim Enterprise for vegetable and fruit production, capitalization and industrialization and at the Galati tomato enterprise, houseplants have been grown on mineral wadding and peat respectively.

At the Ecoprim enterprises in the capital, the plants are cultivated on 30 cm-long, 15 cm wide and 15 cm high mineral wadding parallelepipedons covered by a polyethylene foil. The highest strike root in this new type "soil" and are automatically through capillary tubes with a nutritive solution whose concentration is fixed electronically in keeping with the requirements of the plant's development stages.

The advantages of this growing technology: first of all, residues in the final product are left, so the soil is no longer polluted; moreover, the plant's feeding being very rigorously checked, the entire amount of nutritive substances is assimilated and therefore the fertilizers are turned to best account. On the other hand, the mass of seedlings through pathogenic agents is eliminated through the



soil, some of them chemically incurable or requiring difficult cultivation. The plants are completely eliminated.

Cropping on inert substratum can be applied to high-yielding varieties alone. That is why tomatoes were chosen in the beginning, as they hold the largest share in houseplant vegetable growing and are a very intensive growth. Tomatoes also display a greater adaptability than other plants and given the fact that they are the most threatened by diseases transmitted through the soil, they enjoyed priority in the application of the technology.

So far, following the use of the new technology, yields of 120-130 tons per ha have been obtained with tomatoes, tomatoes in the first cycle, and of 70 tons in the second one. Experts assess that these productions could be doubled if houseplants did not have to be opened in the July-August period owing to the heat.

Tests are currently conducted for applying the technology to houseplants, eggplants and even flowers.

IOANA NECULA

## SCIENCE and LIFE

## EXOTIC RADIOACTIVITY

As early as the beginning of this century physics earned its priority among sciences following the breakthroughs made in the universe of knowledge by the prominent Albert Einstein and the extraordinary impact of quantum mechanics. If the 20th century has the technical-scientific stature we all know (this is largely due to physics, which has generated the whole chain of technologies currently in use, beyond applications however (suffices it to mention the laser and the nuclear-electric plants) in order to bow respectfully to some of physics' achievements) fundamental research is continuing its breath-taking ascent, thousands and tens of thousands of physicists being currently engaged in the attempt at unification within a coherent theory, of the four forces existing in nature (electromagnetic, gravitational, strong and weak).

As an accelerator to the works of a recent edition of the prestigious Nuclear Physics School in Brasov, I have had the opportunity to realize that in many domains of physics, and above all in nuclear physics, the Romanian researchers play an important part. One of their major contributions seems to be the attempt at theoretically unifying two phenomena: nuclear radioactivity and nuclear fission, proposed by the Roman-

nians A. Sandulescu, D. Pogoraru and M. Ivaseu (all of them researchers at the Central Physics Institute of Magurele, together with physicist W. Greiner of Frankfurt, a theory confirmed by the successful tests conducted on this topic in the labs of Oxford, Britain, and Orsay, France).

Natural radioactivity, we know, is a phenomenon discovered by H. Becquerel: in a fragment of uranium ore, a nucleus is converted into another nucleus, emitting during the process three natural radiations: alpha particles (helium nuclei), beta particles (electrons or positrons) and gamma particles (electromagnetic emission).

Nuclear fission, discovered in 1939-1940, is a phenomenon of one nucleus spontaneously splitting into two nearly symmetrical fragments, releasing during this process free neutrons

(which, through a chain reaction, will hit and split other nuclei, which in their turn will release neutrons, a.s.o.). But, taking into account the fact that besides the two phenomena — natural radioactivity and chain-reaction fission — various labs have reported intermediary phenomena (very heavy nuclei, with an atomic mass over 200, splitting spontaneously into two fragments of unequal mass) the four researchers initiated the existence of another kind of radioactivity which subsequently, after their elaboration of the technical apparatus, has been called "exotic radioactivity".

The theory was completed after long years of work and numerous tests: highly sensitive detectors confirmed the fact that from the "background noise" of alpha radiations another, more rare, emission can be separated, whose "author" is a nucleus of radium 223, which spontaneously gives off alpha particles, but also a heavy ion, most of carbon 14 or neon 21.

Besides the two classic means of disintegration, the four fathers of the theory claim, there are numerous other means: slow and "clean" (fission), from which virtually stable fragments of matter result.

The possible means of stepping up these processes — as discovered by the physicists — emission of neutrons or even neutrons (two should not forget however that sometimes the future takes us by surprise, coming sooner than expected) will ensure the applicability of this "cold" fission phenomenon in which the fragments resulting from the process are in a fundamental state and which do not present the usual emission of radiations — with the right they entail for life matter.

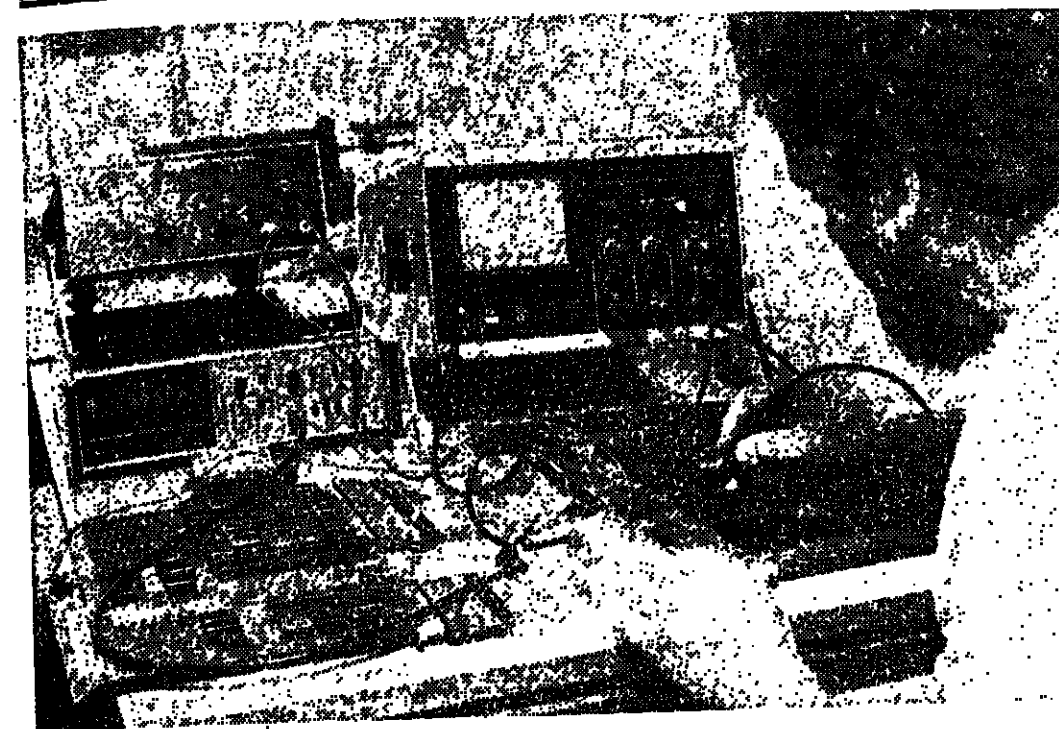
And they will record in the golden book of history the names of the four discoverers and theoreticians of "exotic" radioactivity: Sandulescu, Pogoraru, Ivaseu, Greiner.

ALEXANDRU MIHAIL

## INTEXP

The visiting card of the research collective from the Artificial Intelligence and Robotics Lab within ICST-TCI (The Scientific Research and Technological Engineering Institute for Computer Technology and Informatics) is marked by several prestigious achievements both in the field of application and fundamental research. Among them is the INTEXP system. It is a general instrument used for improving "expert" type intelligent programmes. Now INTEXP is used in improving expert systems in domains like: defect diagnosis in electronic cir-

CUILA MIHAIL



## REACTIVE INTELLIGENCE

The neuron — the basic cell of natural intelligence — could be the equivalent of a microprocessor. This speculation does not solve the technological handicap of intelligent machines. Artificial intelligence is not a copy of the way in which man acts intelligently; the method used in effectively representing knowledge in the computer's memory is essential. Computer and informatics specialists unanimously appreciate that special qualitative mutations will take place in future years in the structure of installations and programmes, owed especially to researches in the field of artificial intelligence. The most needed in improving memory. Based on the experience accumulated ever since 1977 within the research collective for

## SCIENCE and LIFE

### FLEXIBLE SYSTEMS

Flexible fabrication systems are no longer the avant-garde of high technology. This solution was rapidly adopted by most enterprises with small series and unique productions and in general, by the machine fabrication profile is often changed. But flexible systems are very expensive. No production workshop can afford of such an investment by allowing the fact that the applied solution is the best one. That is why, before improving them in the fabrication process proper, the flexible systems are simulated on a computer.

A research collective of ICST-TCI (The Scientific Research and Technological Engineering Institute for Computer Technology and Informatics) conceived as a national first, the model of such a simulator. The SIMFMS programme allows the simulation of flexible fabrication systems for the machine building branch. This simulator is made of five modules which compute the best distribution of parts for each machine, the entrance order of parts and tools for each machine based on the maximum tool flow, the best movements of system components (robots, etc.) the real change of transport modules and processing machines, the detailed presentation of operations in the whole flexible system.

Based on the data fed to the system (topological and technological) the simulator, through coloured Petri networks, gives the best solution for the flexible system simulated. The representation of results is done graphically (diagrams, level curves, etc.) or through tables, while the carrying out of the simulation process is done through animation.

The efficiency of the SIMFMS programme is related first of all to solving the problem of the high cost of introducing flexi-

ties of mass reaction to exterior stimuli, the memory device conceived for the PKPS system is called "reactive memory". This type of memory represents the basis of introducing massive parallelism in systems. Therefore, compared to traditional computers, problems solved over a longer period are automatically solved by this computer, by the parallel processing of memory data.

In the case of the PKPS system, a large number of processors (reaching a million) cooperate in solving problems. Besides conceiving these processing elements, specific to automatic reasoning, Romanian researchers have also studied the best conceptual solutions for communication networks among processors. Theoretical models were elaborated thus solving technological questions concerning their production at industrial level.

The main advantage of the "intelligent" machine conceived by ICST-TCI is that it does not require the user to have specialized training in the computer field. It solves very complicated reasoning problems without a previous programming but by processing data stored in memory. If for example you have a headache and want to know the reason, you just activate the computer which will scan anatomy, diagnosis, etc. data stored in its memory and will give you the answer quickly, making at the same time recommendations for treatment or supplementary investigations. This "intelligent machine" is activated just by plugging it in a socket, like a common TV set.

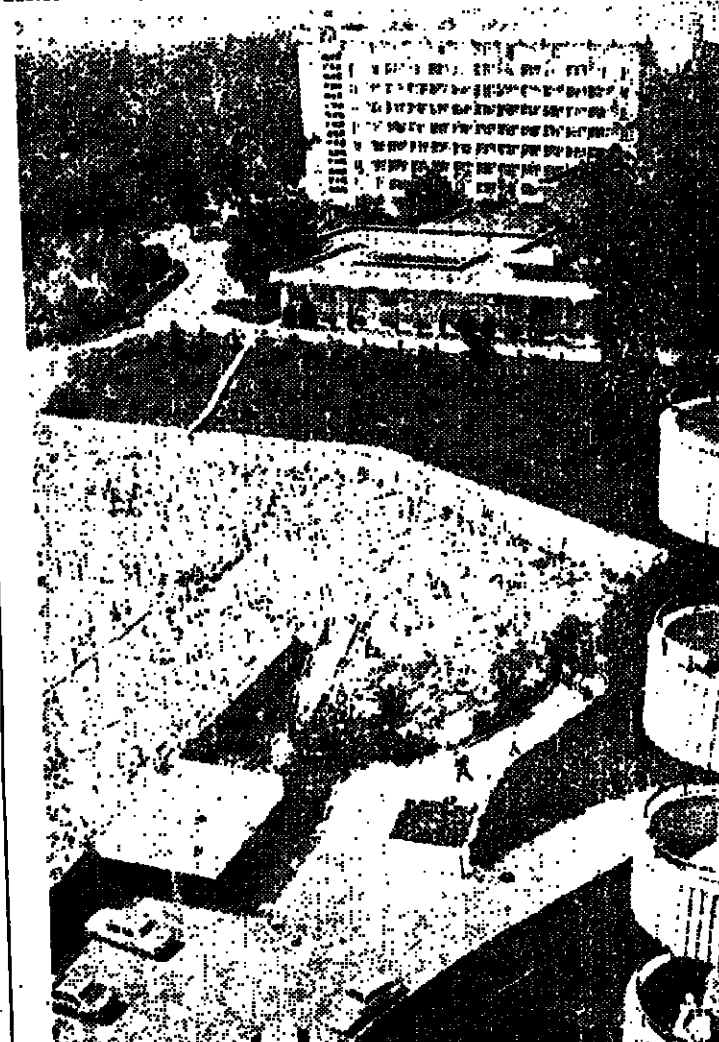
le systems in production. By simulating first on a computer a flexible fabrication system, any production workshop can achieve important economies which can be eventually used to buy its own computer. The SIMFMS also presents the advantage that through the simple assistance to the computer simulation process, the personnel involved in carrying out the respective fabrication flow can be instructed and trained.



## FROM GEOTHERMAL SWIMMING POOLS TO GEOTHERMAL ELECTRIC POWER PLANTS

For centuries on end, geothermal water was only used for therapeutic purposes. At present, following numerous studies of its specific flow and temperature of its origin and direction of flowing, of their chemistry, they have started to be put to most diverse uses: heating sources for houses and solariums and for domestic water, sources of thermal energy for industrial and agricultural units, etc.

While only underground hot water having a temperature of +130°C was being used to generate electricity throughout the world by means of very costly exchange agents, a group of teaching staff and students of the Oradea Higher Education Institute, led by associate professor engineer Teodor Maghiar, D.Sc., devised and put into operation a world first: an installation for the conversion of the energy of medium-tempe-



The interest taken in the last few years in underground hot water as an alternative energy source has fully been justified also by the arguments offered by the UN specialized bodies, which put their energy potential at the equivalent of over 6,000 billion tons of fuel. But low- and medium-temperature waters are more numerous worldwide, and for the time being, the least tapped.

Carbon dioxide offers significant advantages compared to the working agents previously used: from and isobutane — crude derivatives — besides their high cost, are highly flammable and toxic. On the contrary, carbon dioxide can be found in plentiful amounts in nature, being emanated by the earth itself, so that one only has to collect it. But even the synthetic production of carbon dioxide is very cheap, especially as it can be recirculated.

Romania's rich geothermal potential mainly located in the western part of the country (Bihor, Arad, Satu Mare and Timis counties) and the important carbon dioxide deposit at Cluj-Napoca (Bihor county) made possible the development of power generating units using these sources. Consequently, Romania has the world's first geothermal-electric power plant using medium-temperature underground hot water wells was started up at Oradea and has been connected to the national grid. In the current period of acute conventional fuel crisis, the discovery and tapping of alternative energy sources therefore remain extremely topical.

MILENA MIHAI

## SCIENCE and LIFE







## GLIDING WITH... SWALLOWS

On the morning of August 7, 1988, a crew counting 40 members set out on an expedition down the Bistrița river. The means of navigation: 25 boats made of... tractor tyres. The route of the voyage totals up 120 km (stops on the banks are made only to spend the night); according to the plan, the distance was to be covered in a week's time.

The sailors are students of the agroindustrial high school in Vicovul de Sus — a commune located in the far north-east of the country. The "Skipper" of the team is Sorin Trelea, the teacher who, for years, has led the biology society of the high school.

The feverish preparation of the tents, sleeping bags and most of all of the original boats took several months until the much wished-for voyage of the summer holidays. One would not expect the parents to fully share the excitement of the explorer students. For the Bistrița (lined by mountains and thick forests) is a river with a frequently stormy flow; at a place called "Tocino" (whirlpool), the water of the river rages and seethes putting the sailors' skill to hard trial.

However, in spite of the possible risks, no one was aloof by emotion. The biology teacher Sorin Trelea enjoys an unreserved credit due to a whole range of powerful reasons. First of all, his being an intrepid was proved as early as the time when he was only 18 himself. Then, in 1966, finding out that he suffered from altitude sickness he joined the "Moldova" alpine club in Iași and barely one year later he flew alone by glider and received a sports pilot's licence. Is there any connection between his passion for biology (well known by many people) and the passion he has for gliding?

Our questions did not put him off. On the contrary, he told us (not with a teacher's air) how sometimes he flies as high as 2,500 m, together with the clouds or swallows. Once, high up at about 1,600 m, a hawk was chasing three pigeons. The appearance of the glider drove the predatory bird away. But, beyond any sentimental reasons, the sports master has been studying for years the aerodynamic characteristics of birds that use the ascending thermal air currents. The same currents that carry the glider, step by step, up to thousands of meters. It's remarks are accompanied by vivid, convincing images: with one hand he controls the glider while with the other one he operates the camera, the stability of which is ensured by a system he himself has devised. The biologist and glider pilot Sorin Trelea has stored in his personal library one thousand slides. Part of them will serve to illustrate his work on the flight of migratory birds, those who know best how to rely on the ascending thermal currents.

The recent journey with the students and the teacher's family (the wife and two chil-

dren, seven and eleven years old, respectively) aimed, among other things, at: 1. self-knowledge; 2. the study of grassy and brush species in the aquatic environment; 3. the identification of fauna specimens that are characteristic of the river, mainly the bue — a ferocious predator fish which seems to be disappearing. A man of the mountains, of the air and of the water, a sportsman and a researcher, Sorin Trelea can be attributed the



variation of an ecologist as well: "Nature is wise; it annihilates many of the destructive effects — the consequences of man's ignorance and carelessness. The polluted waters and seas are passing through a great danger that concerns us directly. Let us think as often as possible of how little the land means of the area of our planet."

Indeed, let us think!

VIORICA CIORBAĞIU ■



The craft (top and middle) are being tested and checked before sailing; in the bottom picture, the famous Mangalia stud which has won many awards in national and international competitions.

## A CAVALCADE OF SUCCESSES

A cavalcade is something unique. The memory of many films preserves the seducing images of cavalcades in which the horses' shapes and movements proved decisive in labelling the quality of a show. For most of our contemporaries films are the only means of knowing and enjoying this original event. The gallop of horses considered for thousands of years the fastest means of transport on land has been quieted down by the expansion of motor vehicles. Increasingly less used, horses have become an attraction in terms of entertainment and equitation.

Along the years Romania has seen the rise of real "reserves" of horses, distributed according to breeds. Such a reserve is the stud farm of Mangalia. Here, on the sea shore, people have grown the most faithful descendants of the Arab breed. Nicolae Sireteanu, veterinary surgeon with the stud, describes them as middle-sized, mobile animals with an elegant gait, very impulsive but generous. Set up in 1928, the stud of Mangalia has come to grow nine families of Arab horses. Each horse's pedigree includes at least five generations. Zootechnical data are rigorously kept in state genealogical registries specifying the origin, performance, number and value of descendants, considerations on each horse's aptitude. As part of that accurate selection operation by means of annual standings according to which specialists decide where and how each horse is to be used. According to that selection the nucleus breeds only horses with physical qualities and performances matching the best record category. The qualifying test for the Arab breed is gallop under saddle with a load of 80 kg. The best performance ranges between 18 and 112 minutes per one thousand metres.

## LASER ACUPUNCTURE

Dr. Virgilu Băgu from the Galati County Hospital checked, through a scientific method that between the points recommended by traditional Chinese medicine and the corresponding organs there is a mysterious link. Dr. Virgilu Băgu, in collaboration with his colleague dr. Gheorghe Băguș identified an isotope whose energy best fits the bioenergy of classical acupuncture meridians. Then, with the help of this isotope the two physicians established acupuncture points and 14 meridians. What for centuries has been accepted and checked only through effects can be now seen and photographed.

This discovery opens a new horizon to fundamental and applicative research concerning the scientific bases of traditional medicine and opens the way to new treatment possibilities.

The responsible and leaping work of specialists and experts has helped maintain and perpetuate this valuable heritage. For several years the stud of Mangalia has been hosting an original contest entered by all studs in Romania. This, besides the thoroughbred and the Arab, the contest enlisted the studs of Slatina with the Arab breed, Clisău with the thoroughbred English breed, Izvin with the Normans and the Ardennes, Rădăuți with the Gidani and the horse of the kovins, Beceanu with the Romanian heavy harness horse Jegălia with the Romanian carriage horse, the Racecourse of Ploiești with the Romanian trotter etc.

Grand prospects are opened for the Romanian racing horses. Last year, at the Balkan Games of Sofia, the Pamela mare from the stud of Jegălia, Chikara, won in just the hurdles race and in just this year, the "Earthquake" (the name of the horse) won the 1000 metres at Breding (the name of the horse) and International (the name of the horse) races. The stud of Jegălia, bred by the stud of Retru, raised by the stud of Dor-Măruț, Clisău county and trained at Ploiești, was and is the best in the history of that sport.

Cavalcades are unique shows of beauty. And the happiness of the Romanian cavalcades could mean more than just a film scene. Thanks to a concerted action the horse will back to the country, the horse will be the contemporary rhythm of the

MARILENA POTU ■



## A NAME IN TODAY'S FASHION

# CONFEX



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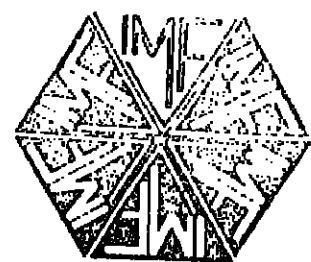
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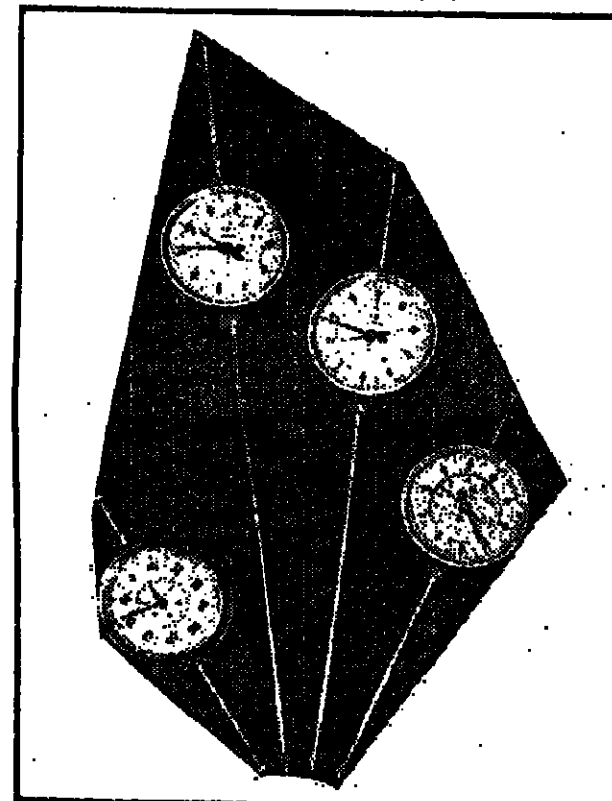
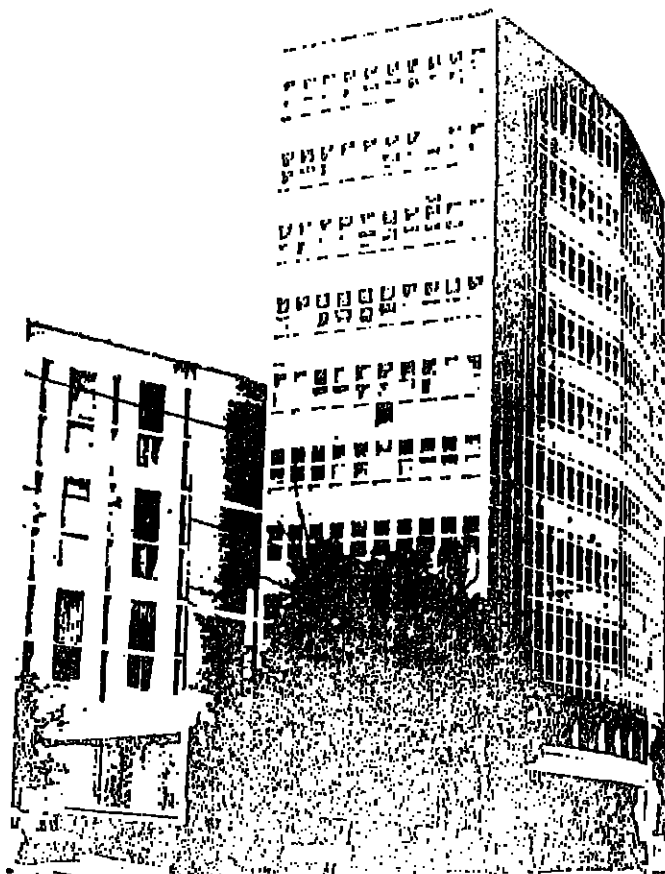
If, generally speaking, "man is the measure of all things" as Protagoras put it, we must stress that the quality of your products and the productivity of your labour are strictly conditioned by the use of MEASURING AND CONTROL APPARATUS.

The post- or in-process sizing of your products supplies you the information through which you can become EFFICIENT as a producer.

It is this efficiency (viz. quality, producti-

vity, competitiveness) that the Fine Mechanics Enterprise (IMF) of Bucharest has in mind when offering its beneficiaries:

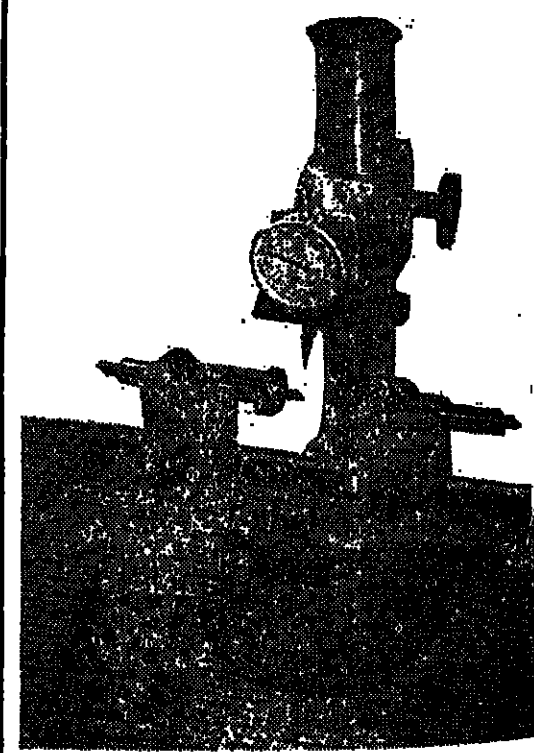
- measuring and control apparatus for lengths, pressures, temperatures, discor-ages, times and speeds;
- special tools (diamond and sinter-carbide metal tools), holders, high-accuracy and fineness devices and dies, having a high degree of productivity and durability.



## MEASURING AND DIMENSIONAL CONTROL APPARATUS AND INSTRUMENTS

- dial gauges ● bore dial gauges ● gear measuring instruments; ● threaded conic gauges for the oil industry.

- circular dial snap gauges ● gear pitch-error and gear-tooth-thickness measuring instruments ● reading ball-gauges; optical read-out devices and rules.



## AUTOMATION ELEMENTS AND MECHANISMS

- Programmers ● electromechanical impulse counters ● programme control for automatic washing machines ● discharge counters with oval wheels ● electromechanical tachographs for motorychicles ● complex speed measuring installations for locomotives and subways.

## FOR PRESSURE INDUSTRIAL CLOCK-TYPE APPARATUS, INSTALLATIONS AND TEMPERATURE CONTROL

This apparatus family includes: pressure switches and thermostats. They are indispensable in the automation of starting and stopping installations using fluids whose temperature and pressure must be maintained within certain preadjusted limits. Pressure switches and thermostats are made by the Fine Mechanics Enterprise in a wide variety according to the features and type of motors they are mounted on and the conditions of the environment.



## IN- AND POST-PROCESS SIZING GAUGES

- They are built according to modern principles, with pneumatic inductive, piezoelectric transducers, whose signals are processed and displayed analogically or numerically in modular-type electronic units:

- pneumatic post-process sizing gauge - SUPERJET ● pneumo-electric post-process sizing gauge - ELSUPERJET ● post-process sizing gauge with electric contacts ● inductive electronic post-process sizing gauge ● roughness measuring post-process sizing gauge; smoothness measuring gauge (electronic levels).

- in-process sizing gauge for continuous exterior cylinder surfaces with one and two measuring points ● for continuous exterior surfaces and for continuous interior cylinder surfaces with two measuring points ● in-process sizing gauge for centreless grinding machines ● in-process sizing gauge for exterior diameters of narrow surfaces ● copying systems mounted on machine tools for processing through copying after a pattern.

REMEMBER THE



IMF TRADEMARK



## SINTER-CARBIDE METAL PRODUCTS

The main groups of products bearing the "CARMESIN" mark - which are the object of the Bucharest Fine Mechanics Enterprise's production programme - are the following: sinter-carbide metal brazable tips and inserts for metal cutting; sinter-carbide metal inserts for mining tools; sinter-carbide metal inserts specific to the wood industry, building materials and extraction industry; products for drilling installations; dies for screws and nuts; dies for roll bearings; other types of products upon the foreign partners' demand.

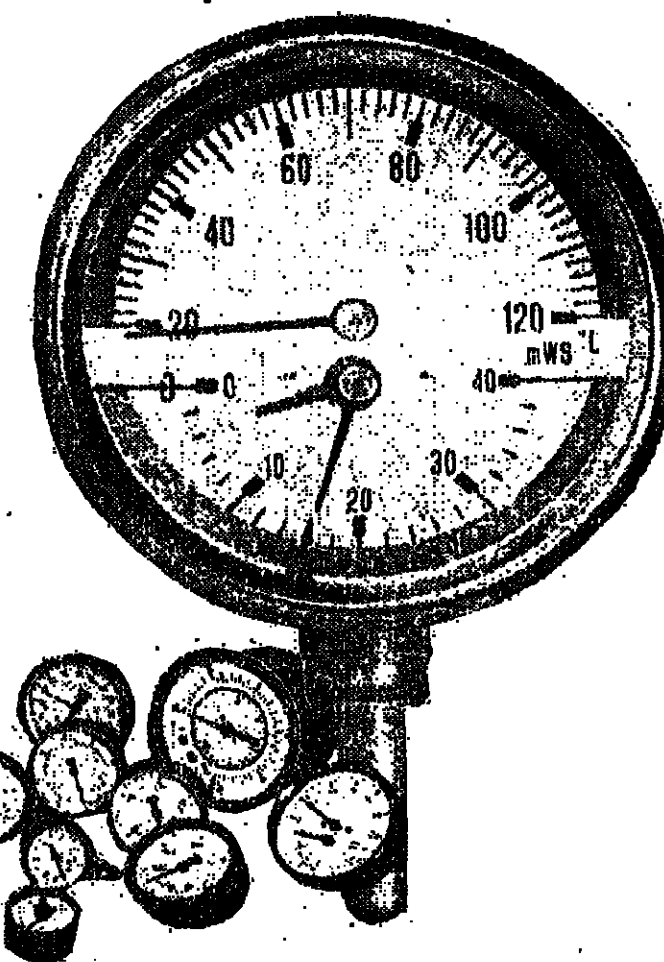
According to the concrete destination indicated by the end user, these products are executed out of the PKMG groups of carbide metal powder, after ISO international standards or according to other requirements specified in the order.

In order to increase the durability and performances of the sinter-carbide metal inserts, the method is applied of coating them with extra-hard layers of titanium carbide, giving the inserts an increased durability of up to 300 percent, as compared to the normal execution.



## PRESSURE GAUGES

Through the great diversity resulting from constructive variants based on measuring limits, accuracy, diameter, connection and scale type, the Fine Mechanics Enterprise can satisfy the most exigent demands of its clients (standard pressure gauges or of special construction, upon demand). There are: ● general use industrial manometers ● vibration-proof manometers ● corrosion-proof manometers ● capsule-manometers ● double indication manometers ● manometers-thermometers.



## DIAMOND TOOLS

The processing of ferrous and non-ferrous metals, of sinter-carbide metal, stone, concrete, ceramic and glass - through modern methods - calls for the use of diamond tools on an ever larger scale.

The manufacturing programme of this kind of tools is achieved at IMF on the basis of the licence purchased from WINTER firm of West Germany and is currently in full swing as a result of the growing demand. It comprises the following more important groups:

- diamond mills with metallic or resin-

uous binder of various shapes and sizes, with cubic boron nitride.

- diamond tools for construction-material processing
- diamond tools with galvanic binder
- honing diamond blades
- diamond pastes
- diamond tools for trimming and shaping abrasive stones
- chamfering tools with extra-hard materials from diamond polycrystals or cubic boron nitride
- diamond drawing dies.

## AND THE EXACT TIME

WHICH YOU CAN LEARN AT ANY MOMENT BY LOOKING AT THE DIAL OF THE WATCH WHOSE TRADEMARK OREX IS A GUARANTEE OF ACCURACY. BUILT IN SEVERAL HUNDRED MODELS BY IMF, THE WATCHES - MECHANIC OR QUARTZ-BASED ANALOG - MEET THE FINENESS OF YOUR AESTHETIC TASTE AND GIVE YOU THE EXACT TIME.



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